WHAT IS CLAIMED IS:

1. A recombinant immunoconjugate, comprising a therapeutic agent or a detectable label peptide bonded to a recombinant anti-CD22 antibody having a V_H with a cysteine at amino acid position 44 and a V_L with a cysteine at amino acid position 100.

2. The recombinant immunoconjugate of claim 1, wherein said therapeutic agent is a toxin.

3. The recombinant immunoconjugate of claim 2, wherein said toxin is a *Pseudomonas* exotoxin (PE) or a cytotoxic fragment thereof.

4. The recombinant immunoconjugate of claim 3, wherein said cytotoxic fragment is PE38.

5. The recombinant immunoconjugate of claim 1, wherein said anti-CD22 antibody is an RFB4 binding fragment.

6. The recombinant immunoconjugate of claim 1, wherein said antibody comprises a variable heavy (V_H) chain substantially similar to SEQ ID NO:2 and a variable light (V_L) chain substantially similar to SEQ ID NO:4.

7. The recombinant immunoconjugate of claim 3, wherein said variable heavy (V_H) chain is peptide bonded to the ~~carboxyl~~ amino terminus of said toxin.

8. The recombinant immunoconjugate of claim 6, wherein said V_H chain is peptide bonded to said V_L chain through a linker peptide.

9. The recombinant immunoconjugate of claim 6, wherein said V_H chain is linked to said V_L chain through a cysteine-cysteine disulfide bond.

10. The recombinant immunoconjugate of claim 8, wherein said linker peptide has the sequence of SEQ ID NO:5.

11. An expression cassette encoding a recombinant immunoconjugate, comprising a sequence encoding for a toxin peptide and an anti-CD22 antibody having a V_H encoding for a cysteine at amino acid position 44 and a V_L encoding for a cysteine at amino acid position 100.

12. The expression cassette of claim 11, wherein said antibody is an RFB4 dsFv.

13. The expression cassette of claim 11, wherein said toxin is a *Pseudomonas* exotoxin (PE) or a cytotoxic fragment thereof.

14. The expression cassette of claim 11, wherein said cytotoxic fragment is PE38.

15. The expression cassette of claim 11, wherein said antibody comprises a variable heavy (V_H) chain substantially similar to SEQ ID NO:1 and a variable light (V_L) chain substantially similar to SEQ ID NO:3.

16. The expression cassette of claim 15, further comprising a sequence encoding for a linker peptide having the sequence of SEQ ID NO:5.

17. A host cell comprising an expression cassette of claim 11.

18. A V_H sequence substantially similar to that of SEQ ID NO:2.

19. A V_L sequence substantially similar to that of SEQ ID NO:4.

20. A nucleic acid sequence substantially similar to that of SEQ ID NO:1.

21. A nucleic acid sequence substantially similar to that of SEQ ID NO:3.

22. A method for inhibiting the growth of a malignant B-cell, said method comprising:

contacting said malignant B-cell with an effective amount of a recombinant immunoconjugate of claim 1.

23. The method of claim 22, wherein said toxin is a *Pseudomonas* exotoxin (PE) or a cytotoxic fragment thereof.

24. The method of claim 22, wherein said malignant B-cell is contacted *in vivo*.

25. The method of claim 22, wherein said malignant B-cell is selected from the group consisting of: a rodent B-cell, a canine B-cell, and a primate B-cell.

26. The method of claim 23, wherein said cytotoxic fragment is a PE38 fragment.

27. The method of claim 22, wherein said immunoconjugate is an RFB4 binding fragment.

28. The method of claim 22, wherein said immunoconjugate comprises a variable heavy (V_H) chain of SEQ ID NO:2 and a variable light (V_L) chain of SEQ ID NO:4.

29. The method of claim 23, wherein a variable heavy chain is peptide bonded at the carboxyl terminus of said toxin.

30. The method of claim 29, wherein said V_H chain is peptide bonded to said V_L chain through a linker peptide.

31. The method of claim 29, wherein said V_H chain is linked to said V_L chain through a cysteine-cysteine disulfide bond.

32. The method of claim 31, wherein said linker peptide has the sequence of SEQ ID NO:5.

33. An anti-CD22 antibody comprising a variable heavy (V_H) chain substantially similar to SEQ ID NO:2 and a variable light (V_L) chain substantially similar to SEQ ID NO:4.

34. The anti-CD22 Fv fragment of claim 33, wherein said antibody is detectably labeled.

35. The antibody of claim 33, wherein said antibody is conjugated to a therapeutic agent.

36. The antibody of claim 33, wherein said therapeutic agent is a *Pseudomonas* exotoxin (PE) or cytotoxic fragment thereof.

37. A method for detecting the presence of CD22 protein in a biological sample, said method comprising:

(a) contacting said biological sample with an anti-CD22 antibody comprising a variable heavy (V_H) chain substantially similar to SEQ ID NO:2 and a variable light (V_L) chain substantially similar to SEQ ID NO:2;

(b) allowing said antibody to bind to said CD22 protein under immunologically reactive conditions, wherein detection of said bound antibody indicates the presence of said CD22 protein.

38. The method of claim 37, wherein said antibody is detectably labeled.

39. The method of claim 37, wherein the method is performed *in vivo* in a mammal.